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ABSTRACT

This study was an investigation in two parts. First, a study of the applicability of spelling-patterns to syllables was made. Second, the applicability of the spelling-patterns to whole words was examined. The criteria for applicability used are (1) The word list must contain a minimum of twenty words to which the generalization might apply; and (2) The generalization must have a percent of utility of at least 75. The results for the first part of this study show that the percent of utility for the spelling patterns taken as a group in this study was 70 percent. Thus, taken as a group, the criteria established for the study of meeting a 75 percent utility were not met. In the second part, only those generalizations in which 40 or more syllables were found to which the generalizations might apply were used. The results show that 81 percent of the words were composed in which every syllable contained spelling patterns identified for the investigation. The findings of the study showed that most of the syllables of the list were represented by a word-pattern and that many of the syllables followed a word-pattern in phonetic spelling. The results also indicated that many of the word-patterns are of limited value. In using word-patterns for instructional purposes, the low applicability of many of the secondary and tertiary patterns should be considered. Further study needs to be conducted to assist in utilizing this information to improve instructional situations. (CK)

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THE USEFULNESS OF LINGUISTICALLY-BASED WORD GENERALIZATIONS

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The development of independence in word recognition is one of the goals of many modern reading programs. During the fifties a new surge of interest was shown in the value of teaching word recognition clues, especially phonics. Many schools re-examined and then increased the emphasis placed upon phonics in the reading program. These new programs included a whole array of phonic generalizations without research to support the utility of the generalizations, either in the primary grades or in later years.

In the sixties several studies were done to assess the utility of teaching phonics generalizations. From a study of the use of phonic generalizations in primary school reading, Clymer (3) concluded that many generalizations which are commonly taught are of limited value. Clymer selected 45 reasonably useful generalizations and applied them to a sample of words taken from the primary level of four basal readers. He found that only eighteen of the forty-five generalizations met the arbitrarily established criteria for application.

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The studies of Bailey (1) and Emans (5) replicated Clymer's study, extending the analysis above the primary grades. Bailey used a word list from basal readers of the first six elementary grades; Emans used 10 percent of the graded words beyond the primary level (grade four) in The Teacher's Word Book of 30,000 Words by Thorndike and Lorge. Both studies supported

Clymer's results that many of the phonic generalizations included in reading programs are of limited use in approaching more advanced vocabulary.

Wardhaugh (9) criticized the research because, "No attempt was made to examine the generalizations themselves for their linguistic sense or to order them in any way." This study was undertaken as an effort to rectify these concerns. Fries (6), a linguist, in his analysis of language, suggested a modification of the reading program in the elementary school. He proposed that patterns of letter sequences should be taught rather than single letter-sound relationships. He stated, "The spelling-patterns represent the word-patterns; but the individual letters in the sequence of a spelling pattern do not necessarily duplicate the sequence of the phonemes in the word-pattern for which the spelling-pattern stands."

This study was an investigation in two parts. First, a study of the applicability of spelling-patterns to syllables was made. Second, the applicability of the spelling-patterns to whole words was examined. The second part of the study was deemed necessary since spelling patterns are generally related to syllables rather than words.

Procedures

The sample of words, developed by Emans for his replication of Clymer's study, was used for the two parts of the study. To develop the list, Emans randomly selected 10 percent of the graded words, or 1853 words, beyond the primary level (grade four) in The Teacher's Word Book of 30,000 Words by Thorndike and Lorge (8). As in the previous study, Webster's New Collegiate Dictionary (2) was used to record the spellings, phonetic respelling, and syllabic division of the words.

Spelling pattern generalizations developed from specialists in linguistics were identified. The work of Charles C. Fries was used as the basis for the generalizations. In addition, the generalizations were categorized as primary, secondary, and tertiary. An example of a primary generalization was: consonant-vowel-consonant; an example of a secondary generalization was: consonant-"long" vowel-"silent" vowel-consonant; an example of a tertiary generalization was: ai as in paid. There were twelve primary, forty-five secondary, and thirty-six tertiary generalizations.

The classification system used is, admittedly, arbitrary. Some of the primary generalizations could have been classified as secondary generalizations under a broader primary generalization. Thus, in turn, some of the secondary generalizations could have been considered as tertiary. However, if a spelling pattern generalization was emphasized in the literature it was generally classified as a primary generalization.

The criteria for applicability developed by Clymer for his study, and used by Emans, were used with some modification in the present study. Clymer's criteria were:

1. The word list must contain a minimum of twenty words to which the generalization might apply.
2. The generalization must have a percent of utility of at least 75. (2)

Since there were approximately twice as many syllables in the present study, 4819, as there were words in Clymer's study, 2600, the first criterion was changed to state, There must be a minimum of forty syllables to which the spelling pattern might apply. The second criterion, The generalization must have a percent of utility of at least 75, was kept.

Results

The results for the first part of this study involving syllables are presented in Table I and Table II. The 1853 words in this study contained 4819 syllables. Of these 4819 syllables, 4405 contained a spelling pattern identified for this investigation while 414 syllables did not. (See Table I) Of the 4405 syllables containing one of the spelling patterns, 3384 syllables followed the spelling pattern and 1021 syllables did not. The percent of utility for the spelling patterns taken as a group in this study was 70 percent. Thus, taken as a group, the criteria established for the study of meeting a 75 percent utility was not met.

In Table II, the results for each of the primary, secondary, and tertiary spelling pattern generalizations are presented. Of the twelve primary generalizations, four met the criteria: Co $\breve{V}$ Co, Co$\breve{y}$, Co vr or Co vr Co, and Co le. Nine of the forty-five secondary generalizations met the criteria: Cs $\breve{V}$ Cs, Cs $\breve{V}$ Ccl, Cs $\breve{V}$ Cd, Ccl $\breve{V}$ Cs, Co er, Co $\bar{V}$/ Co (10a, 1-10), Co /$\breve{V}$ Co, Co vdp or Co vpd Co, Co vd or Co vd Co; and two of the thirty-six tertiary generalizations met the criteria: Co ø$\breve{u}$, Co io.

The second part of this study involved the application of the spelling pattern generalizations of syllables to whole words. Only those generalizations in which 40 or more syllables were found to which the generalizations might apply were used. The results of this part of the study are presented in Table III. Of the 1853 words, 360 words (or 19 percent of the entire total) were found which had one or more syllables which did not contain a spelling pattern identified for this study. Thus, 81 percent of the words were composed in which every syllable contained spelling patterns identified for the investigation. Of those words in which every syllable contained an identified spelling pattern, 54 percent (or 43 percent of the entire total) did

not follow the spelling pattern and 46 percent (or 37 percent of the entire total) did not.

TABLE I

SUMMARY OF THE UTILITY OF
SPELLING PATTERNS ON SYLLABLES

Does Not Contain Pattern	Contains Pattern And Follows Pattern	Contains Pattern But Does Not Follow Pattern	Total		Percent of Utility
			Those That Contain Pattern	Grand Total	
414	3384	1021	4405	4819	70

Discussion

How one interprets the results of this study depends upon one's orientation. Only fifteen of the ninety-three spelling patterns met the established criteria. Comparing this number with the eighteen phonic generalizations meeting the criteria in Clymer's study, one might conclude that spelling pattern generalizations have less to offer than the traditionally taught phonic generalizations. However, 70 percent of the syllables within the words studied followed the patterns. One could view this finding as supportive of involving spelling patterns in instruction. The 75 percent utility criterion established by Clymer is, admittedly, arbitrary and 70 percent may be viewed as being close enough to the 75 percent criterion. On the other hand, only 37 percent of the words contained every syllable following an identified spelling pattern. Possibly, the results of this study involving the specific generalizations (e.g., Co io) may be of greater practical help than some of the more general findings.

TABLE II

UTILITY OF SPELLING PATTERNS ON SYLLABLES

	Pattern	Follows Pattern	Does Not Follow Pattern	Total	Percent of Utility
1-0	Co $\breve{v}$ Co	1828	162	1990	92*
	1-a Cs $\breve{v}$ Cs	1224	112	1336	92*
	1-b Cs $\breve{v}$ Ccl	168	14	182	92*
	1-c Cs $\breve{v}$ Cd	217	15	232	94*
	1-d Ccl $\breve{v}$ Cs	114	10	124	96*
	1-e Ccl $\breve{v}$ Cd	33	1	34	
	1-f Ccl $\breve{v}$ Cd	27	4	31	
	1-g Cd $\breve{v}$ Cs	35	2	37	
	1-h Cd $\breve{v}$ Ccl	4	2	6	
	1-i Cd $\breve{v}$ Cd	6	2	8	
2-0	Co $\bar{v}$ Co ∉	232	124	356	65
	2-a Cs $\bar{v}$ Cs ∉	165	77	242	68
	2-b Cs $\bar{v}$ Ccl ∉	15	27	42	36
	2-c Cs $\bar{v}$ Cd ∉	5	10	15	
	2-d Ccl $\bar{v}$ Cs ∉	33	3	36	
	2-e Ccl $\bar{v}$ Ccl ∉	0	5	5	
	2-f Ccl $\bar{v}$ Cd ∉	1	0	1	
	2-g Cd $\bar{v}$ Cs ∉	13	2	15	
	2-h Cd $\bar{v}$ Ccl ∉	0	0	0	
	2-i Cd $\bar{v}$ Cd ∉	0	0	0	
3-0	Co $\bar{v}$ or Co $\dot{\bar{v}}$	454	293	747	60
	3-a Cs $\bar{v}$ or Cs $\dot{\bar{v}}$	372	256	628	57
	3-b Ccl $\bar{v}$ or Ccl $\dot{\bar{v}}$	69	26	95	73
	3-c Cd $\bar{v}$ or Cd $\dot{\bar{v}}$	13	11	24	

Key:

Co - Any consonant element
Cs - Single consonant
Ccl - Consonant blend
Cd - Consonant digraph

∉ - Silent letter

v - Vowel
$\breve{v}$ - Short vowel
$\bar{v}$ - Long vowel
$\dot{\bar{v}}$ - Long vowel in unaccented syllable
vr - Vowel modified by "r"
vv - Vowel combination
vd - Vowel digraph
vdp - Vowel diphthong

TABLE 11 (continued)

	Pattern	Follows Pattern	Does Not Follow Pattern	Total	Percent of Utility
4-0	Coy^{u}	255	6	261	98*
5-0	Co vr or Co vr Co	377	116	493	77*
	5-a Co ar	48	37	85	57
	5-b Co er	254	36	290	88*
	5-c Co ir	13	4	17	
	5-d Co or	34	35	69	49
	5-e Co ur	28	4	32	
6-0	Co vvr or Co vvr Co	6	1	7	
	6-a Co ear (earn)	5	1	6	
	6-b Co ear (wear)	1	0	1	
	6-c Co oor (door)	0	0	0	
	6-d Co air	0	0	0	
7-0	Co vr ɛ	0	0	0	
	7-a Co ar ɛ (care)	0	0	0	
	7-b Co er ɛ (there)	0	0	0	
8-0	Co vw	34	1	35	
	8-a Co aw (saw)	8	1	9	
	8-b Co ew (few)	6	0	6	
	8-c Co ow (plow)	12	0	12	
	8-d Co ō̲w	8	0	8	
9-0	Co al or Co all	4	0	4	

TABLE 11 (continued)

	Pattern	Follows Pattern	Does Not Follow Pattern	Total	Percent of Utility
10-0	Co $\bar{v}$ ≠ Co	112	312	424	26
	10-a Co $\bar{v}$≠ or Co $\bar{v}$≠ Co	112	12	124	90*
	10a-1 Co $\bar{a}$≠ (paid)	28	4	32	
	10a-2 Co $\bar{a}$≠ (say)	9	1	10	
	10a-3 Co $\bar{e}$≠ (each)	24	1	25	
	10a-4 Co $\bar{e}$≠ (meet)	29	0	29	
	10a-5 Co $\bar{e}$≠ (either)	2	2	4	
	10a-6 Co $\bar{o}$≠ (coat)	12	0	12	
	10a-7 Co $\bar{o}$≠ (toe)	2	0	2	
	10a-8 Co $\bar{o}$≠ (dough)	4	4	8	
	10a-9 Co $\bar{u}$≠ (cue)	1	0	1	
	10a-10 Co $\bar{u}$≠ (suit)	1	0	1	
	10-b Co $\breve{v}$≠ or Co $\breve{v}$≠ Co	18	1	19	
	10b-1 Co $\breve{a}$≠ (laugh	1	1	2	
	10b-2 Co $\breve{e}$≠ (dead)	12	0	12	
	10b-3 Co $\breve{o}$≠ (ought)	5	0	5	
	10-c Co ≠$\bar{v}$ or Co ≠$\bar{v}$ Co	12	5	17	
	10c-1 Co ≠$\bar{a}$ (steak)	1	0	1	
	10c-2 Co ≠$\bar{u}$ (feud)	1	1	2	
	10c-3 Co ≠$\bar{i}$ (height	2	0	2	
	10c-4 Co ≠$\bar{e}$ (chief)	8	4	12	
	10c-5 Co ≠$\bar{y}$ (buy)	0	0	0	
	10-d Co ≠$\breve{v}$ or Co ≠$\breve{v}$ Co	51	0	51	100*
	10d-1 Co ≠$\breve{a}$ (ial)	5	0	5	
	10d-2 Co ≠$\breve{e}$ (friend)	2	0	2	
	10d-3 Co ≠$\breve{u}$ (rough)	40	0	40	100*
	10d-4 Co ≠$\breve{i}$ (built)	4	0	4	
	10-e Co vdp or Co vdp Co	44	5	49	90*
	10e-1 Co oi (oil)	11	0	11	
	10e-2 Co oy (toy)	5	1	6	
	10e-3 Co ey (they)	1	2	3	
	10e-4 Co ou (out)	27	2	29	

TABLE II (continued)

	Pattern	Follows Pattern	Does Not Follow Pattern	Total	Percent of Utility
	10-f Co vd or Co vd Co	164	0	164	100*
	10f-1 Co au (caught)	15	0	15	
	10f-2 Co ai (said)	1	0	1	
	10f-3 Co ei (freight)	2	0	2	
	10f-4 Co oe (shoe)	1	0	1	
	10f-5 Co oo (book)	5	0	5	
	10f-6 Co oo (pool)	18	0	18	
	10f-7 Co oo (flood)	0	0	0	
	10f-8 Co ou (could)	4	0	4	
	10f-9 Co ue (true-oo)	1	0	1	
	10f-10 Co io (ion)	117	0	117	100*
11-0	Co le	75	5	80	94*
12-0	Co vv c≠ ∉	7	1	8	
	12-a Co v̄v (raise)	1	0	1	
	12-b Co vd (gouge)	1	0	1	
	12-c Co vdp (noise)	5	1	6	

*Meets criteria established for study

∓ Spelling pattern identified in literature but no syllable found in word list

One or More Syllables in Word Not Containing Spelling Pattern		Every Syllable in Word Containing Spelling Pattern					
		One or More Syllables In Word Not Following Pattern Although Pattern is Present			All Syllables in Word Containing Pattern and Following Pattern		
Number of Words	Percent of Words from Entire List	Number of Words	Percent of Those Words Containing Spelling Pattern	Percent of Words from Entire List	Number of Words	Percent of Those Words Containing Spelling Pattern	Percent of Words from Entire List
360	19%	800	54%	43%	693	46%	37%

TABLE III

THE UTILITY OF SPELLING PATTERNS ON SYLLABLES
APPLIED TO WHOLE WORDS

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If procedures of this study were modified, differing results might have occurred. For example, the words used in this study were on fourth to twelfth grade levels. If words for the primary grades had been used the results might have been different. Such a study is presently underway. Similarly, 414 syllables in this investigation did not contain a spelling pattern identified for the study. Many of these syllables consisted of one vowel only, such as the first syllable in the word about. The addition of such a spelling pattern would have altered the results to some degree. In addition, if another dictionary using different syllabic divisions, phonetic respellings, and the like had been used, the results may have been changed. However, the dictionary utilized in the previous studies by Clymer, Emans, and Bailey was used so that comparisons could be made.

In summary, the findings of the study showed that most of the syllables of the list were represented by a word-pattern and that many of the syllables followed a word-pattern in phonetic spelling. The results of this study also indicated that many of the word-patterns are of limited value. The Co $\overset{V}{V}$ Co pattern was high in utility and greatly exceeded all other patterns in applicability. In using word-patterns for instructional purposes, the low applicability of many of the secondary and tertiary patterns should be considered. Further study needs to be conducted to assist in utilizing this information to improve instructional situations.

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